DC Fire & EMS Special Operations: Chlorine Gas Exposure

Note Well: *Chlorine gas is one of the most common single, irritant, inhalation exposures, occupationally and environmentally. In a recent study of 323 cases of inhalation exposures reported to poison control centers, the largest single source of exposure (21%) was caused by mixing bleach with other products.*

In the five year period from 1988-1992, the American Association of Poison Control Center's National Data Collection System revealed 27,788 exposures to chlorine. Where the outcome was categorized, 40 resulted in a major effect, 2091 resulted in a moderate effect, 17,024 resulted in a minor effect and three fatalities occurred.

I. All Provider Levels

Note Well: *Remove patient from environment only if it is safe.*

1. Refer to the Patient Care Protocols.

2. Findings associated with chlorine gas exposure.

   A. Cough (52-80%).
   B. Shortness of breath (20-51%).
   C. Chest pain (33%).
   D. Burning sensation in the throat and substernal area (14%).
   E. Nausea or vomiting (8%).
   F. Ocular and nasal irritation (4-6%).
   G. Tachypnea.
   H. Wheezing.
   I. Nasal flaring.
   J. Cyanosis.
   K. Rhinorrhea.
   L. Hoarseness of the throat or stridor.
   M. Rales (acute respiratory distress syndrome[ARDS] /noncardiogenic pulmonary edema).
   O. Crepitus (associated with pneumomediastinum).

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I. All Provider Levels (continued)

3. Place patient on high-flow oxygen and monitor pulse-ox.

4. Eye and skin exposures require copious irrigation with saline.

5. Establish IV access of normal saline.

> ***Note Well:*** *An ALS Unit must be en route or on scene.*

   A. Fluid restriction in all patients with ARDS.

6. If bronchospasm is present, administer albuterol 2.5mg, by nebulizer.

II. Advanced Life Support Providers

1. If patient is experiencing laryngospasm, intubation is necessary.

> ***Note Well:*** *Consider using the largest size endotracheal tube possible to optimize hospital pulmonary procedures.*

2. Apply and monitor EKG.

3. Consider the use of a nebulized solution of sodium bicarbonate.

   A. 4cc of a 3.75% solution, made by diluting 2cc of a standard 7.5% solution with 2cc of normal saline, inhaled via a nebulizer.

III. Transport Decision

1. Notify receiving facility of a contaminated patients.

IV. The Following Options are Available by Medical Control Only

1. Poison Control may be contacted at 1-800-222-1222 or 202-625-3333. They may be utilized as Medical Control if contacted through the Med Control radio as Hospital 11.

2. Additional albuterol nebulizer treatments.

3. Additional sodium bicarbonate nebulizer treatments.

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